

## WHAT IS CLAIMED IS:

1. An adaptive brake application and initial skid detection system for braking of a wheel of a vehicle, comprising:

a wheel brake for braking the wheel;

a brake torque sensor for generating brake torque signals that are a function of the brake torque applied to the wheel;

means for comparing said brake torque signals with a predetermined threshold brake torque;

wheel speed signal generating means for producing wheel speed signals that are a function of the rotational speed of the wheel;

a wheel velocity converter for generating a wheel velocity signal based upon said wheel speed signals;

velocity reference generating means for generating a reference velocity signal;

wheel velocity comparison means for comparing said wheel velocity signal with said reference velocity signal for generating wheel velocity error signals indicative of the difference between said aircraft wheel velocity signals and said reference velocity signal;

a torque bias modulator integrator responsive to said brake torque signals for adjusting said wheel velocity error signals to provide an anti-skid control signal;

command brake torque signal generating means for generating a command brake torque signal in response to a deceleration command;

brake torque comparison means for comparing said brake torque signals with said command brake torque signal for generating brake torque difference signals indicative of the difference between said brake torque signals and said command brake torque signal; and

control means for providing an adjusted brake torque signal to said wheel brake to control said wheel brake independently of operator brake application, in response to said brake torque difference signals.

2. The adaptive brake application and initial skid detection system of Claim 1, further comprising:

means for initializing the torque bias modulator integrator with a predetermined threshold brake torque plus a predetermined constant torque value, to thereby minimize delay of said torque bias modulator integrator in controlling the maximum allowable brake torque.

3. The adaptive brake application and initial skid detection system of Claim 2, further comprising means for initializing the torque bias modulator integrator to the value of a measured brake torque when the wheel velocity error signal becomes greater than a velocity error threshold.

4. The adaptive brake application and initial skid detection system of Claim 1, wherein said torque bias modulator integrator is responsive to brake torque signals, and further comprising:

means for initializing the torque bias modulator integrator with a predetermined threshold brake torque plus a predetermined constant torque value, to thereby minimize delay of said torque bias modulator integrator in controlling the maximum allowable brake torque.

5. The adaptive brake application and initial skid detection system of Claim 4, further comprising means for initializing the torque bias modulator integrator to the value of a measured brake torque when the wheel velocity error signal becomes greater than a velocity error threshold.